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Good Seed Corn for 1913

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Abstract

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METHODS OF STORING

AGRICULTURAL EXPERIMENT STATION
IOWA STATE COLLEGE OF AGRICULTURE
AND THE MECHANIC ARTS

AGRONOMY SECTION

Farm Crops

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GOOD SEED CORN FOR 1913

BY H. D. HUGHES

Whether Iowa farmers will have good seed corn for next spring's planting will depend upon whether they select their seed in the field early, before a sharp freeze, and whether they dry it properly this fall and store it in the right kind of a place this winter. If any one of these factors is neglected, the man who neglects them is more than likely to be without good seed corn in 1913.

Although a general alarm about seed corn has been sounded regularly every fall for some years, the vitality of the seed in the spring has become worse rather than better. This is true, not because of the greater attention given to the selection and care of seed in the fall, but rather in spite of it.

WHY SEED HAS BEEN POOR.

The low vitality of seed in recent seasons has been due, first of all, to the fact that Iowa farmers are growing very much larger, later maturing varieties than formerly. This later maturing corn contains considerably more moisture when harvested than Iowa seed corn formerly did. The water content often ranges as high as 60 per cent at the time of picking seed whereas the moisture found in well-cured corn is from 10 to 14 per cent. These later maturing varieties are also deeperkerneled and have considerably less space between the rows, making it even more difficult to get rid of this large excess of moisture before freezing weather comes on.

The second cause for low vitality is what may be termed exceptional, unfavorable weather in the fall. Under such unfavorable conditions, which occur every year, sometimes in one locality and sometimes in another, the earlier maturing types of corn which were formerly grown showed little injury. This, together with the fact that many falls are long and dry, led to the habit of waiting until October or November to select seed corn. This delay in saving seed may be called still another cause for the conditions referred to.

These several factors were very largely to blame for the very poor quality of seed corn in the seasons of 1910 and 1912.

THE REMEDY USUALLY SUGGESTED.

When these conditions are faced, the usual advice is to test separately the germination of each seed ear. While this is the best possible thing which can be done under the conditions, it cannot make up for carelessness and neglect in the fall. When seed is injured by freezing, the stand in the field will seldom range above 75 per cent, even when each ear is tested separately and when only those ears



Examining the Ears While on the Stalk.

are used for seed whose kernels when tested showed strong vitality. Seed which is perfect in vitality, having been selected early and carefully stored, should give at least 95 per cent of a stand, other conditions being favorable.

CONDITIONS IN 1912.

Because the Iowa Agricultural Experiment Station and the agricultural and newspaper press of the state had so many times called atten-

tion to the poor condition of a great deal of the seed corn, many farmers last spring paid scant attention to the facts presented. They assumed, apparently, that the members of the state experiment station staff and the newspapers had formed a habit and that they issued such warnings whether there was particular need or not. The result was that many men in every community did not come to realize the true condition of the seed supply until just before planting time. Then there was little or no opportunity to test out their own seed and then, also, it was quite impossible to buy seed of good vitality which was adapted to the local conditions because good seed was scarce everywhere. Consequently, in spite of the work of the station, the press, the railroads and other organizations, much corn was planted which was not up to the standard of good seed.

INSURE GOOD SEED FOR 1913 NOW.

What is done this fall and winter will determine very largely the quality of the seed corn next spring. Unless prompt measures are taken and great care is used in picking seed corn early this fall, and in drying it as quickly and as thoroughly as the conditions will permit, Iowa seed corn in the spring of 1913 will be of even poorer quality than that available in the spring of 1912. The summer of 1912 has been remarkably cool and as a result the corn has not matured as rapidly as in an average season. Most of the corn over the state is without doubt from ten days to two weeks late in maturity.

SEED MUST BE PICKED EARLY.

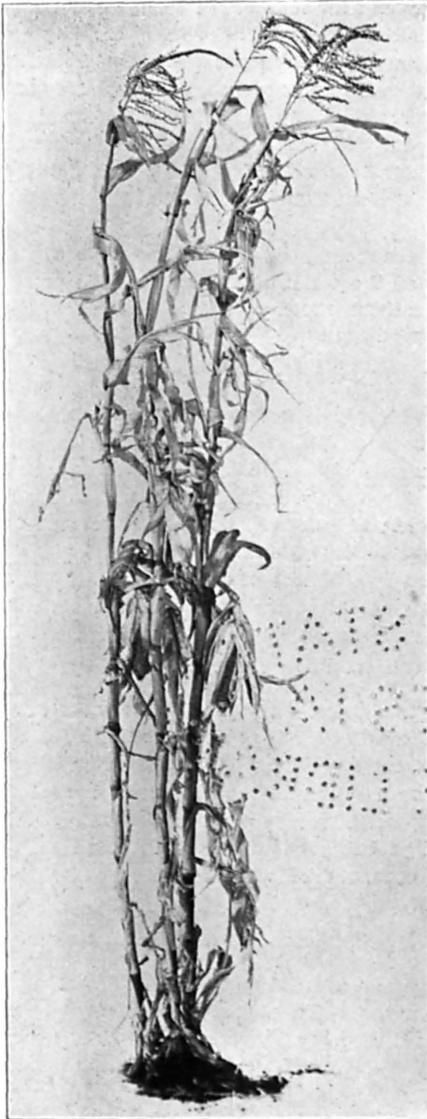
To insure good vitality the seed must be picked as soon as it is thoroughly well dried, and before there is danger of a sharp freeze. While it is possible to pick seed corn too early, before the vitality and vigor of the kernels have developed to the fullest extent, yet the selection should not be unduly delayed. The last week in September and the first week in October will probably be the most opportune time for selecting most of the seed corn. It will be possible to pick some corn before this date.

SELECT SEED IN THE FIELD.

There is but one logical place and method to select seed corn, and this is in the field, direct from the stalk, picking several times as much as will be required to plant the area proposed to be put in corn the next year.

In selecting corn in the field there are several things which must be taken into consideration:

First, select those ears which give indication that they will produce corn which will mature well in an average season. Maturity may be measured by the dryness of the leaves and husks and the indentation of the kernels.



A Good Hill from Which to Select Seed;
Three Good Strong Stalks, Each
Bearing a Good Ear.

Second, select ears only from hills which have three stalks. Careful tests indicate that good seed ears developed under these conditions will yield more and better corn than ears of as good or better appearance, grown in hills having fewer stalks and where the competition was consequently less severe.

Third, study the stalk producing the ear selected. It is now well known that by selection it is possible to control very largely the character of the stalk, its general strength and vigor, its height, the height at which the ear is borne and the position of the ear. Select ears from stalks which tend to be sturdy, rather than too tall, which have a medium to good development of leaf and on which the ear is borne at a convenient height and drooping rather than erect. Experiments indicate that ears borne high, rather than low, will give the greatest yields, but it is well to remember also that corn is inconvenient to husk when borne very high and that a greater per cent of these stalks will break over, with more corn damaged and lost as a result.

USE CARE IN DRYING THE SEED.

Early fall selection of seed is necessary, but this in itself will not insure good vitality the following spring. Seed corn must also be properly dried and cured; it must be freed quickly of a large share of its ex-

cess moisture before freezing weather comes on, and it must have good ventilation to prevent mould or fermentation setting in. Otherwise the vitality is almost sure to be greatly impaired. That early selection alone is not enough has been shown repeatedly by the large amount of corn gathered in this way which is yet worthless the following spring. Proper care in drying the corn in the fall and in storing it in the winter is of the greatest importance.



Artificial Heat May Be Used to Get the Ears Dry Before Freezing Weather Comes On. Note that Good Ventilation is Assured, Yet that the Large Door Can Be Closed in Damp or Cold Weather.

GIVE GOOD VENTILATION AND DRY ATMOSPHERE.

In choosing a place to store seed corn, two factors of prime importance are to be considered.

First, ventilation.

Second, a dry atmosphere.

As already stated, the seed ear when taken from the field may contain in the neighborhood of 60 per cent of water, while to be safe

from freezing weather, corn should contain not much more than 10 per cent of moisture. This means that a very large amount of water must be thrown off, and this in a very few weeks.

It is especially important, therefore, to have good circulation of air around the seed corn to cure it properly. With a new supply of dry air coming continuously in contact with the seed ears, a large amount of water may be carried away in a comparatively short time. To get this result, provision must be made for thorough ventilation.

In the fall of the year there are usually a comparatively large number of days when the air is dry, but there are also times of misty, rainy weather when the air contains much moisture. During such wet "spells" all doors and windows must be closed as tightly as possible; otherwise the corn may absorb a great deal of new moisture, since after it is once dry it can absorb water almost as quickly as it can throw it off. It is important that the air coming in contact with the seed ears be dry.

PLACE TO STORE THE SEED.

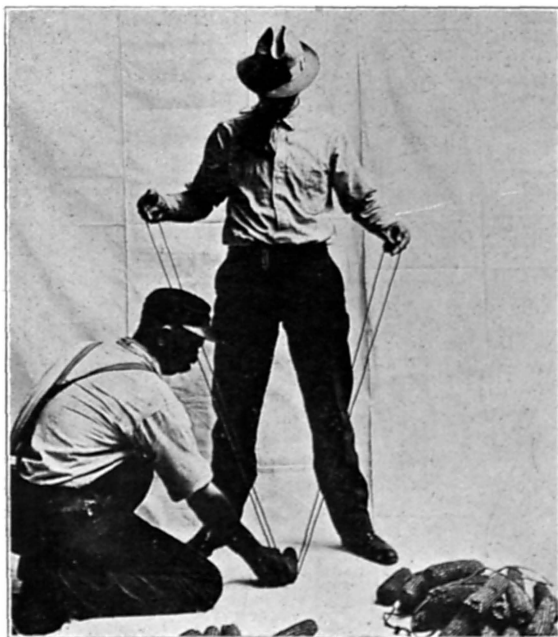
On most Iowa farms only enough seed for home use is saved. Where this is the case, storage places must be found which fill all the requirements for good storage without making it necessary to provide a special building. On the larger farms or on farms where considerable seed is to be saved for sale, special storage buildings may be desirable.

A vacant or little used room in the house, which preferably has windows on at least two sides, is perhaps the best place for the seed ears as good ventilation is assured there in the fall and the room is likely to be warmer and dryer in the winter than most other places which might be used.

A good, dry cellar, with plenty of windows which may be opened for ventilation, has been found satisfactory because in such a place there will be little likelihood of the corn freezing. This is especially true if any kind of a furnace is used. However, unless thoroughly good ventilation is insured, the corn had better be hung in some building where doors and windows can be opened wide during drying days, but closed tight during damp weather. Before danger of a severe freeze the corn may be removed to the cellar. Since it is then more thoroughly cured than when brought from the field, it may also be corded up on racks, in this way requiring much less space than would otherwise be necessary.

The attic is usually dry, and may prove a good place for the seed provided it can be properly ventilated.

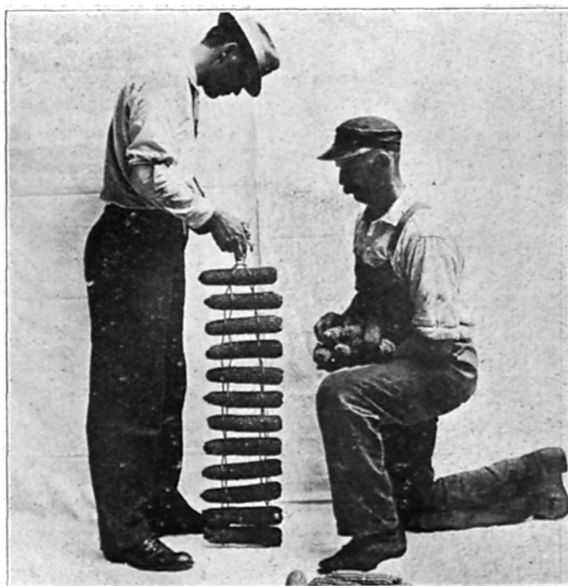
If the seed is to be stored in the barn or in some outbuilding, it must not be placed near stock or over a crib of corn or other grain.



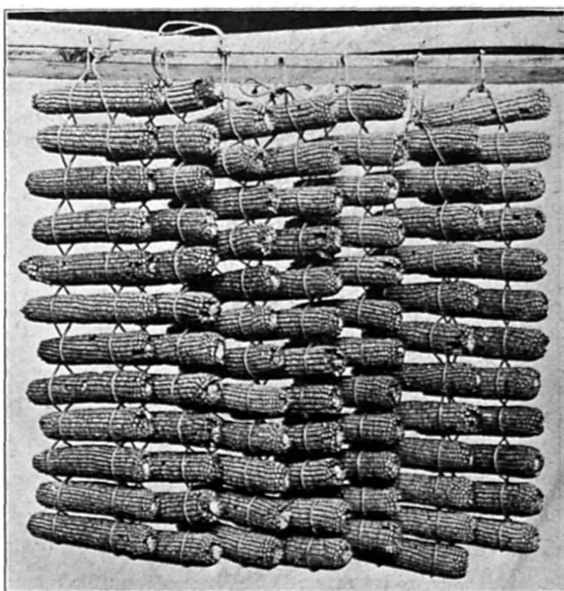
A Piece of Twine 15 Feet Long is a Convenient Length.



Holding the First Ear in Place with the Feet; the Strands are Crossed as Shown and the Second Ear Put in Position



Ready to Hang Up.



A Bushel of Corn in Good Condition to Dry and in Small Space.

Under such conditions there is usually considerable moisture in the air during the greater part of the winter, and this, combined with a hard freeze would likely prove disastrous to the vitality of the corn.

METHOD OF STORING.

The method of storing is of secondary importance provided the place is right. The method selected should, however, provide a free circulation of air on all sides of each ear. In other words, no two ears should touch nor should they lay flat upon a board or other surface. This is especially important when the ears are selected early and contain a large amount of moisture.

It is also important that the seed be protected from mice and rats. A method which probably best meets both of these conditions is that of hanging the seed from a wire pole, or rafter with binder twine as is shown in the accompanying illustrations. In this way a large amount of seed can be hung in a comparatively short time and in a little space.

Woven wire, tacked on both sides of a framework made preferably of 4" material, using care that the meshes are opposite, makes an excellent rack. Lath tacked 3 to 4 inches apart on each side of 4" uprights make excellent, cheap racks, each pair of lath accommodating twenty-five or more ears. Such a rack 5 feet in height holds 400 ears. A device which is especially desirable for storage, because it makes the sorting and testing of the seed especially easy, is a tray made by sawing 1"x4" material into 4" lengths, using 3 of these and 2 lath to make a tray, nailing the lath on the ends of the 4" pieces at the lower edge. These strong, light trays can be conveniently piled one above another, forming racks. The cost of material sufficient to hold 100 ears is about 10 cents.

Other good devices are made by driving nails into boards, poles, posts, etc., over which the butts of the ears are thrust.

A large number of devices for storing corn have been offered on the market. Many of them give good satisfaction and may be used by those who do not care to devise a method of their own. Home-made methods may be used, however, with as great satisfaction.

Other bulletins on seed corn which are available, and which may be secured by writing to the Bulletin Editor, Iowa Experiment Station, Ames, Iowa, are:

Circular No. 1.

Extension Bulletin No. 9.